

Appl. No. 09/830,598
Amdt. dated November 2, 2003
Reply to Office action of May 2, 2003

REMARKS

Reconsideration is respectfully requested. Claims 1-18 are present in the application. Claims 1, 4, 8, 10, 13 and 17 are amended herein. Claims 2, 3, 11 and 12 are canceled.

Applicants wish to thank the Examiner for considering the IDS submitted with the International Search report.

A notice of appeal with extension of time is being submitted concurrently herewith (copy attached) to maintain the application in a pending status while the Examiner considers this response.

The Examiner objected to claim 1 as allegedly introducing new matter and also as containing subject matter not described in the specification. Applicants have amended claim 1 herein with attention to the Examiner's concerns, in an effort to further prosecution of the application.

Claims 1-18 are rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Mitsui et al (U.S. 6,087,047). Also, the Examiner indicates that the previous rejections are maintained. Applicants respectfully traverse.

Independent claims 1 and 10 include the limitation that the claimed item includes at least one layer wherein the composition ratio of tantalum atoms and other atoms is such that 100 or less other atoms are contained per 100 tantalum atoms. It is

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respectfully submitted that this is neither taught nor suggested by Mitsui et al.

The Examiner rejects claims 1-4 as being anticipated by Nozawa et al, U.S. Patent 6,395,434 under 35 U.S.C. §102(e) Applicants note that the priority date of this present application (September 9, 1999) is before the U.S. filing date of Nozawa et al.

Even assuming Nozawa et al remained as a reference, it does not teach claim 1, because from study of the document, it appears that the "other" atoms as taught in Nozawa are not "100 or less" per "100 tantalum atoms" (assuming substitution of tantalum for vanadium). Referring to the chart of FIG. 7 of Nozawa, various atom percentages of vanadium, nitrogen and oxygen are shown in the examples as follows:

V%	N%	O%
0	43	0
0	15	37
10	44	0
9	12	38
0	56	0
0	9	20
27	33	0

This does not teach the 100 or less other atoms per 100 tantalum atoms as in claim 1 (and claim 10), nor does it teach the entire ranges of compositions in claim 4 (or claim 13). Claims 4 and 13 are amended to adjust the ranges given to clarify that they are unique from what is shown in Nozawa (50 to 175 oxygen atoms, whereas Nozawa is 200).

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Claims 1-4 and 10-13 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Hashimoto et al (U.S. 5,538,816) or by Mitsui (U.S. 5,804,337) or Mitsui (U.S. 5,849,439).

Hashimoto shows chromium to oxygen atoms ratio of 100:100 to 100:300. The Examiner then notes that Hashimoto teaches that the chromium compound may contain tantalum (see column 178, lines 7-12 of Hashimoto), and concludes that therefore the invention is shown by Hashimoto. However, the document does not state in what amounts tantalum might be included in the chromium compound, so applicants respectfully traverse the rejection under anticipation, since there is no teaching as to what amounts of these other metals (such as tantalum) one would include in the chromium compound. Thus, applicants respectfully submit that the claims are not taught by Hashimoto.

As for Mitsui (U.S. 5,804,337), this document shows use of particular oxygen and nitrogen amounts, with molybdenum in specific examples, but mentions that the metal can be molybdenum, tantalum, or tungsten. In the graph of FIG. 5, oxygen is shown to be about 2 times the content % as nitrogen and as the metal (Mo). This does not meet the limitations of the claims as amended herein. Claims 4 and 13 are amended to be independent and include the range of 50 to 175 oxygen atoms and 1 to 200 nitrogen atoms per 100 tantalum atoms. It is respectfully submitted that these are allowable.

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Regarding Mitsui (U.S. 4,849,439), this document mentions oxygen percentages, and mentions that tantalum can be used (column 7, line 32) in place of the molybdenum shown in the examples, but does not relate the amount of oxygen to amount of tantalum (nor to molybdenum). Therefore, applicants respectfully submit that it cannot anticipate claims 4 or 13.

Claims 5-9 and 14-17 are rejected 35 U.S.C. §103(a) as obvious over Hashimoto et al (5,538,816), Mitsui (5,804,337) or Mitsui (5,849,439) mentioned above, in view of Mitsui (U.S. patent 6,037,083). The Examiner adds Mitsui 6,037,083 to teach lamination, indicating that it would be obvious. The issue as to these claims is somewhat similar as to the issues with claims 1-4 and 10-13. That is, the ranges claimed as amended are respectfully submitted to be neither shown nor suggested.

Claim 18 is rejected as obvious in view of all the documents above used to reject claims 5-9 and 14-17, with the addition of Mohri et al (U.S. 5,576,123). Mohri et al is added to show hafnium oxide film as an etching stopper layer. It is noted that the Examiner included claim 9 with the previous group of rejections, but most likely intended to reject it together with claim 18. Claims 9 and 18 are submitted to be allowable as depending from claims that are also allowable.

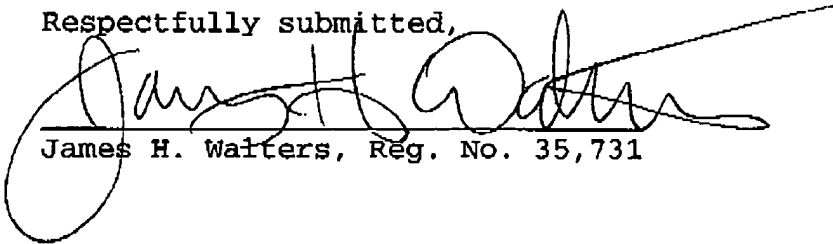
In light of the above noted amendments and remarks, this application is believed in condition for allowance and notice thereof is respectfully solicited. The Examiner is asked to

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contact applicant's attorney at 503-224-0115 if there are any
questions or if further information is requested.

Respectfully submitted,


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